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## (54) PAPER

- (71) I, MARCEL SCHAPIRA, a French Citizen, of 118 Avenue Jean-Jaures, Paris 19, France, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—
- The present invention relates to tissue papers of a hygienic nature for body use (hereinafter called "tissue" for the sake of convenience) and, more particularly, but not exclusively toilet papers and toilet tissues.
- Known tissues of this kind have been conceived only for permitting efficient wiping, and all improvements hitherto proposed have been directed towards the qualities of the tissue in keeping with this objective, that is to say towards fineness, ability to be crumpled or bunched up without forming sharp folds, resistance to tearing, and softness to the touch. Several qualities of tissue have been proposed, the best known being a relative smooth very thin paper and crepe paper, which latter gains in softness what it loses in strength, this deficiency being additionally considerably accentuated by moisture.
- Scenting of tissues can be cited as the sole attempt at improvement not directly bound up with use. Moreover, despite all the care taken in the production of the tissue and in the various processes necessary for its conditioning, a high degree of asepsis cannot be guaranteed, and deterioration occurs in the time which elapses between manufacture and use. On this account, the comfort or emollient effect arising from use of soft toilet tissues is quite often illusory, more especially when account is taken of conditions of modern life which, for many people involves sitting, for long periods, on chairs or seats (such as vehicle seats) of non-ventilated plastics material and the result of which is that moisture and perspiration not absorbed by the clothing (often made of synthetic textiles) encourage overheating, sweating and irritation in the rectal region as well as development of certain micro-organisms such as yeasts and fungoid growths. Impregnated tissues are used, for example to freshen-up the face or for removing make-up, but these have the disadvantage of being moist and, therefore, of necessitating special tight and individual conditioning for each sheet, which is absolutely incompatible with a toilet tissue for both economic and practical reasons.
- An object of the present invention is to provide a dry tissue by which these disadvantages or difficulties can be avoided, which incorporates a carrier which provides improved wiping qualities of the tissue and which further incorporates at least two active substances which for example guarantee a high degree of asepsis, or contribute to improving comfort by reducing perspiration and by protecting against inflammation and irritation.
- With this object in view, the present invention provides a dry tissue paper of a hygienic nature for body use characterised in that it incorporates at least two active substances (as herein defined) in a solid carrier having a melting point which is lower than human body temperature.
- The active substances may have similar or different properties.
- The carrier and active substances may be introduced either by incorporating them into the pulp from which the paper is made so that they are present in the entire thickness of the tissue, or by depositing them on one or both surfaces of the tissue and then drying

the tissue, or by a combination of these two processes.

Another possibility consists in sandwiching the carrier and active substances between two thin sheets which form the tissue and allow them to diffuse when the tissue is used for wiping.

As used herein, the term "active substance" means a substance which is inert relative to the tissue, which does not produce any secondary reaction on the skin and the mucous membranes, and which is one or more of the following, namely an antiseptic, a bactericide, a bacteriostatic agent, an anthelmintic agent, an antiphlogistic agent, an antiperspirant, a fungicide, a deodorant, a lubricant, and/or an emollient epidermic agent.

The active substances should, of course, be inert relative to one another.

Non-restrictive examples of said active substances are antiseptic bactericides such as thymol, resorcinol and hydroxyquinoline sulphate; antiperspirant agents such as aluminium chlorohydrate, aluminium chloride, sodium lactate, aluminium lactate, aluminium salicylate and zirconium hydroxide; and substances having several effects such as menthol which is both a skin antiseptic and an emollient agent.

The combination of selected ones of these substances with cellulose esters, e.g. in admixture, results in a sizing or coating material which is not very adherent to the tissue and which, upon use of the tissue, will leave a slight deposit in the wiped region thereby generating a prolonged sensation of well-being.

The hygienic tissue of the invention can be in the form of toilet paper, but by appropriate choice of the active substances incorporated therein such tissues may be a medicinal paper, a pharmaceutical paper or a paper for various particular and specific applications.

Relative hereto, it is to be mentioned that where the tissue of the invention incorporates an active substance or active substances having lubricating and emollient properties, the tissue may be of practical use, for instance, in the fields of intimate hygiene and cosmetic products.

Indeed, by incorporating in the tissue, as an active substance, a substance which discourages drying-up of the skin, the tissue can be rendered suitable for use in the production of towels for intimate hygiene, for example for the surface layers of sanitary towels which have to remain for a considerable time in contact with the skin and mucous membrane without irritating them. It can also be employed for the production of towels for removing make-up.

The following examples illustrate compositions for use in the invention:—

#### Example 1:

2,4,4' - trichloro - 2' - hydroxydiphenyl ether (as a bactericide and bacteriostat)	parts	65
azulene (as an antiphlogistic agent)	0.050	70
ethylene glycol monolaurate (as carrier)	0.025	
	100.000	

#### Example 2:

3,3' - dibromo - 5,5' - dichloro dihydroxydiphenylmethane (as a bactericide and fungicide)	parts	75
menthol (as a skin antiseptic and an emollient epidermic agent)	0.05	80
propylene glycol monomyristate (as carrier)	0.05	
	100.000	85

#### Example 3:

2,4,4' - trichloro - 2' - hydroxydiphenyl ether (as a bactericide and bacteriostat)	parts	90
thymol (as an antiseptic and an anthelmintic agent)	0.050	
azulene (as an antiphlogistic agent)	0.030	
polyoxyethylene glycol monostearate (as carrier)	0.025	95
propylene glycol monomyristate (also as carrier)	50.000	
	50.000	

In all these examples, the mixture can be incorporated into the tissue by adding to the pulp from which the paper is made, by applying the mixture as a single liquid or the substances as successive liquids to one or both surfaces of the tissue and thereafter drying the tissue, or by sandwiching the mixture between two thin paper sheets which together form the tissue.

The active substances are associated with the solid carrier, which itself may be active also, this carrier having a melting point which is lower than human body temperature so that it will readily become transferred to the skin when the tissue is rubbed thereover, leaving on the skin a film which contributes to counteracting any damage or irritation which might arise from the wiping operation.

Naturally the invention is not restricted to the foregoing examples, and variations may be made thereto within the scope of the following claims.

#### WHAT I CLAIM IS:—

1. A dry tissue paper of a hygienic nature for body use characterised in that it incor-

porates at least two active substances (as herein defined) in a solid carrier having a melting point lower than human body temperature.

- 5 2. A tissue paper as claimed in Claim 1 characterised in that one of the active substances is 2,4,4' - trichloro - 2' - hydroxy diphenyl ether.

- 10 3. A tissue paper as claimed in Claim 1 or 2 characterised in that one of the active substances is azulene.

4. A tissue paper as claimed in any preceding claim characterised in that one of the active substances is thymol.

- 15 5. A tissue paper as claimed in any preceding claim characterised in that one of the active substances is aluminium chlorohydrate or aluminium chloride.

- 20 6. A tissue paper as claimed in any preceding claim characterised in that one of the active substances is menthol.

7. A tissue paper as claimed in any preceding claim characterised in that the carrier comprises propylene glycol monomyristate.

8. A tissue paper as claimed in any preceding claim characterised in that the carrier comprises polyoxy ethylene glycol monostearate. 25

9. A tissue paper as claimed in any of Claims 1 to 6, characterised in that the solid compound comprises ethylene glycol monolaurate. 30

10. A hygienic tissue according to Claim 1 and substantially as herein described.

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